

CLAIMS

What is claimed is:

1. A fastener, comprising:
 2. an integrated isolation member composed of a resilient material, the isolation member being adapted to isolate a storage media drive to which the fastener is to be mounted from a drive cage in which the drive is to be installed, the isolation member being sized and configured to fit within a slot of the drive cage and to abut a surface of the drive cage.
 1. 2. The fastener of claim 1, wherein the isolation member is composed of a thermoplastic elastomer material.
 1. 3. The fastener of claim 1, wherein the isolation member includes an outer wall and an axial portion, the outer wall being adapted to abut the drive cage surface and the axial portion being configured to fit within the drive cage slot.
 1. 4. The fastener of claim 1, wherein the isolation member includes ribs that are adapted to abut the drive cage surface.
 1. 5. The fastener of claim 1, further comprising a threaded stud that is adapted to thread into an opening of the storage media drive prior to insertion of the drive into the drive cage.

1 6. The fastener of claim 5, further comprising a head that is used to
2 tighten the fastener.

1 7. The fastener of claim 6, further comprising a washer upon which the
2 isolation member is provided, the washer being located between the head and the
3 threaded stud.

1 8. The fastener of claim 7, further comprising a shaft that extends
2 between the head and the threaded stud, the washer being mounted on the shaft.

1 9. A fastener for isolating a storage media drive within a drive cage, the
2 fastener comprising:

3 a head that is used to tighten the fastener;
4 a shaft that extends from the head;
5 a washer that contacts the shaft;
6 a threaded stud that extends from the shaft beyond the washer; and
7 a resilient isolation member that is provided on the washer between the washer
8 and the head, the isolation member including an outer wall that is adapted to abut a
9 surface of the drive cage and an axial portion that surrounds the shaft that is adapted
10 to fit between opposed edges of a slot formed in the drive cage.

1 10. The fastener of claim 9, wherein the head, shaft, and threaded stud are
2 unitarily formed with each other.

1 11. The fastener of claim 10, wherein the head, shaft, and threaded stud are
2 made of a metal material.

1 12. The fastener of claim 9, wherein the head is a Torx head.

1 13. The fastener of claim 9, wherein the washer is press-fit onto the shaft.

1 14. The fastener of claim 9, wherein the axial portion of the isolation
2 member has a diameter that is approximately the same as an outer diameter of the
3 head.

1 15. The fastener of claim 9, further comprising ribs that extend radially
2 outward from the axial portion to the outer wall.

1 16. The fastener of claim 15, wherein the ribs have a height that is greater
2 than a height of the outer wall so as to define top portions that extend beyond a top
3 surface of the outer wall.

1 17. The fastener of claim 9, wherein the isolation member is made of a
2 thermoplastic elastomer.

1 18. The fastener of claim 9, wherein the isolation member is injection
2 molded to the washer, shaft, and head.

1 19. A storage media drive, comprising:
2 an outer housing that defines ends of the drive; and
3 fasteners that are mounted to the ends of the drive, the fasteners each
4 comprising an integrated isolation member composed of a resilient material, the
5 isolation member being adapted to isolate the drive from a drive cage in which the
6 drive is to be installed, the isolation member being sized and configured to fit within a
7 slot of the drive cage and to abut a surface of the drive cage.

1 20. The drive of claim 19, wherein the isolation member includes an outer
2 wall and an axial portion, the outer wall being adapted to abut the drive cage surface
3 and the axial portion being configured to fit within the drive cage slot.

1 21. The drive of claim 20, wherein the isolation member further includes
2 ribs that extend from the axial portion to the outer wall.

1 22. The drive of claim 19, further comprising openings formed in the ends,
2 wherein the fasteners are threaded into the openings with threaded studs.

1 23. The drive of claim 19, wherein the fasteners further include a washer
2 upon which the isolation member is provided.

1 24. The drive of claim 19, wherein the fasteners further include a shaft that
2 extends between the head and the threaded stud.

1 25. The drive of claim 19, wherein the drive is a magnetic hard drive.

1 26. The drive of claim 19, wherein the drive is an optical drive.

1 27. A method for isolating a storage media drive to reduce transmission of
2 vibration from the drive to a drive cage, the method comprising:

3 mounting fasteners to opposed ends of the storage media drive, the fasteners
4 each comprising an integrated isolation member that is sized and configured to fit
5 between opposed edges of a slot formed in the drive cage and to abut a surface of the
6 drive cage adjacent the slot; and

7 next inserting the storage media drive into the drive cage with the fasteners
8 travelling along opposed slots formed in the drive cage;

9 wherein the storage media drive is secured in place within the drive cage by
10 the mounting fasteners such that an outer housing of the drive does not make contact
11 with the drive cage and only the isolation members of the fasteners contact the drive
12 cage.

1 28. The method of claim 27, wherein inserting the storage media drive
2 comprises inserting the drive until the fasteners align with raised portions formed
3 along the slots of the drive cage.

1 29. A fastener, comprising:
2 means for securing the fastener to a storage media drive; and
3 integral means for dampening vibrations generated by the storage
4 media drive so that less vibration is transmitted to a drive cage in which the drive is
5 mounted.

1 30. The fastener of claim 29, wherein the means for dampening comprises
2 an injection molded isolation member made of a resilient material.

1 31. A computer sub-assembly, comprising:
2 a storage media drive;
3 a drive cage that receives the storage media drive; and
4 a fastener that fastens to the storage media drive, the fastener including a
5 resilient isolation member that is adapted to abut a surface of the drive cage so as to
6 physically isolate the drive cage from the storage media drive to reduce transmission
7 of vibrations from the storage media drive to the drive cage.